

## ABSTRACT

A reflection mirror apparatus, used in a reflection optical system of an exposure apparatus which performs exposure processing by guiding exposure light by reflection, has a mirror having a reflection surface to reflect the exposure light, and radiation plates for radiation-cooling provided in positions away from an outer surface of the mirror. The radiation plates are provided so as to ensure a passage area for the exposure light incident on and reflected from the reflection surface of the mirror. Further, the respective radiation plates are temperature-controlled by cooling liquid flowing through cooling pipes. Thus the temperature rise of the mirror used in the reflection optical system of the exposure apparatus can be suppressed, and the accuracy of surface form of the mirror reflection surface can be maintained.